

WHAT IS CLAIMED IS:

1. A memory function body comprising:

a first conductor and a second conductor;

5 a medium that is formed between the first conductor and the second conductor and made of a first material; and

at least one particle that is formed in the medium, covered with a second material, and made of a third material,

10 the second material being a material that functions as a barrier against passage of electric charges, and

the third material being a material that has a function to retain electric charges.

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2. The memory function body as claimed in claim 1, wherein the first material and the second material are different insulators, and the third material is a conductor.

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3. The memory function body as claimed in claim 2, wherein the second material is a material obtained by making the third material insulative.

4. The memory function body as claimed in claim 3, wherein the second material is a material obtained by oxidizing or nitriding the third material.

5 5. The memory function body as claimed in claim 1, wherein the first material is a silicon oxide or a silicon nitride, the second material is a semiconductor oxide or a metal oxide, and the third material is a semiconductor or a metal.

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6. The memory function body as claimed in claim 4, wherein the second material is aluminum oxide, and the third material is aluminum.

15 7. The memory function body as claimed in claim 5, wherein the second material is aluminum oxide, and the third material is aluminum.

8. The memory function body as claimed in claim 1, wherein the first conductor is a silicon substrate, and the medium is a silicon oxide or a silicon nitride.

20 9. A particle forming method, comprising:
 implanting a substance for forming one or more
25 particles into an insulator by an ion implantation method;

forming conductive particles from the substance implanted in the insulator; and

making the conductive particles insulative at a periphery thereof.

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10. The particle forming method as claimed in claim 9, wherein the substance for forming conductive particles is implanted into the insulator from a direction that makes an acute angle with respect to a surface of the insulator.

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11. The particle forming method as claimed in claim 9, comprising ionizing the substance to be implanted into the insulator for forming the conductive particles into negative ions.

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12. The particle forming method as claimed in claim 9, wherein after implanting the substance for forming one or more conductive particles into the insulator by the ion implantation method, the particle forming method further comprises:

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etching the insulator from a top surface to a prescribed depth.

13. The particle forming method as claimed in claim 9, wherein said forming conductive particles from the

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substance implanted in the insulator comprises performing a heat treatment for a time shorter than 24 hours.

14. The particle forming method as claimed in claim
5 9, wherein said making the conductive particles insulative at a periphery thereof comprises oxidizing or nitriding the periphery of each conductive particle.

15. A particle forming method, comprising:
10 diffusing a substance for forming one or more conductive particles into an insulator by a solid phase diffusion method;
 forming conductive particles from the substance diffused in the insulator; and
15 making the conductive particles insulative at a periphery thereof.

16. The particle forming method as claimed in claim
15, wherein said making the conductive particles insulative
20 at a periphery thereof comprises oxidizing or nitriding the periphery of each conductive particle.

17. The particle forming method as claimed in claim
15, wherein said forming conductive particles from the

substance implanted in the insulator comprises performing a heat treatment for a time shorter than 24 hours.

18. A particle forming method, comprising:

5 forming an insulator on a semiconductor substrate;

implanting a substance that contains a conductive element into the insulator by a negative ion implantation method; and

10 subjecting the insulator, in which said substance has been implanted, to heat treatment in an oxidizing atmosphere or a nitriding atmosphere.

15 19. The particle forming method as claimed in claim 18, wherein said implanting a substance that contains a conductive element into the insulator comprises implanting the substance from a direction that makes an acute angle with respect to a surface of the insulator.

20 20. The particle forming method as claimed in claim 18, wherein the heat treatment in the oxidizing atmosphere or the nitriding atmosphere is performed for a time shorter than 24 hours.

21. A memory device including a field-effect type transistor that employs the memory function body as claimed in claim 1.

5 22. A semiconductor device including a memory circuit in which the memory devices as claimed in claim 21 are integrated.

10 23. Electronic equipment including the semiconductor device as claimed in claim 22.